

Appl. No : 10/060,842
Filed : January 29, 2002

AMENDMENTS TO THE CLAIMS

The claims as listed below will replace all prior listings and presentations of claims in the above-identified application.

Please cancel claims 20-30 without prejudice. Applicant reserves the right to pursue the cancelled claims in a subsequent divisional application.

1. (ORIGINAL) A field emission display device, comprising:
 - a faceplate and a baseplate;
 - a luminescent phosphor coating applied to a lower surface of the faceplate to form phosphorescent pixel sites; and
 - a cathode member formed on the baseplate to form individual electron-emission sites which emit electrons to activate the phosphors, the cathode member comprising:
 - a semiconductor layer overlying a substrate, the semiconductor layer including an emitter tip;
 - an aluminum layer surrounding the tip and incorporating nitrogen;
 - an insulating layer surrounding the tip and overlying the aluminum layer; and
 - a conductive layer surrounding the tip and overlying the insulating layer.
2. (ORIGINAL) The display device of Claim 1, wherein the conductive layer comprises a second aluminum layer incorporating nitrogen.
3. (ORIGINAL) The display device of Claim 1, wherein the cathode member further comprises a layer of grid silicon between the insulating layer and the conductive layer.
4. (ORIGINAL) The display device of Claim 1, wherein the aluminum layer comprises an atomic composition of about 2% - 10% nitrogen.
5. (ORIGINAL) The display device of Claim 1, wherein the aluminum layer comprises an atomic composition of about 5% - 8% nitrogen.
6. (ORIGINAL) The display device of Claim 1, wherein the aluminum layer has a resistivity of less than about 10 $\mu\Omega$ cm.
7. (ORIGINAL) The display device of Claim 1, wherein the aluminum layer has a surface roughness of about 300 Å to 400 Å.

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8. (ORIGINAL) The display device of Claim 1, wherein the aluminum layer is substantially hillock-free.

9. (ORIGINAL) A field emission cathode, comprising:

- a substrate;
- an emitter tip formed on the substrate;
- an aluminum film overlying said substrate and surrounding said emitter tip, said aluminum film including nitrogen;
- a gate layer formed above the aluminum film and surrounding said tip,

10. (ORIGINAL) The cathode of Claim 9, wherein said gate layer comprises aluminum and nitrogen.

11. (ORIGINAL) The cathode of Claim 9, wherein the aluminum film comprises an aluminum nitride subphase.

12. (ORIGINAL) The cathode of Claim 9, further comprising a dielectric layer between the gate layer and the aluminum film.

13. (ORIGINAL) The cathode of Claim 12, further comprising a layer of grid silicon between the dielectric layer and the gate layer.

14. (ORIGINAL) The cathode of Claim 13, further comprising a semiconductor layer between the dielectric layer and the aluminum film.

15. (ORIGINAL) The cathode of Claim 14, wherein the aluminum film comprises an atomic composition of about 2% - 10% nitrogen.

16. (ORIGINAL) The cathode of Claim 15, wherein the aluminum film comprises an atomic composition of about 5% - 8% nitrogen.

17. (ORIGINAL) The cathode of Claim 15, wherein the aluminum film has a resistivity of less than about 10 $\mu\Omega$ cm.

18. (ORIGINAL) The cathode of Claim 15, wherein the aluminum film has a surface roughness of about 300 Å to 400 Å.

19. (ORIGINAL) The cathode of Claim 15, wherein the aluminum film is substantially hillock-free.

20.-30. (CANCELLED)